高功率異質材料磊晶系統 (Metal Organic Chemical Vapor Deposition, MOCVD)

製程能力

機台製程能力

◻ Precursor種類

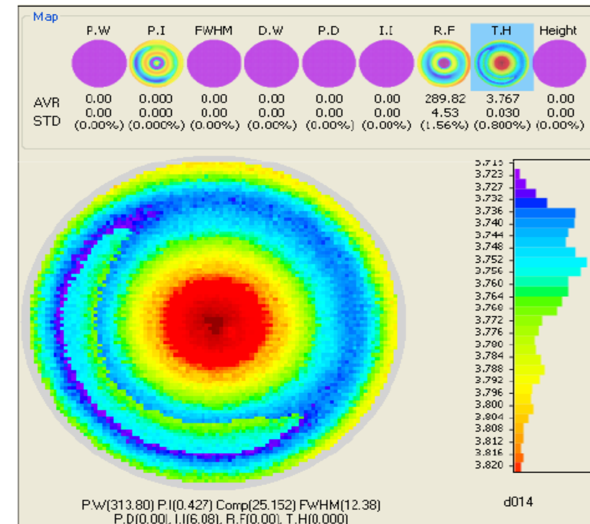
- TMGa、TMAl 、CP2Mg

◻ 磊晶材料與元件結構：

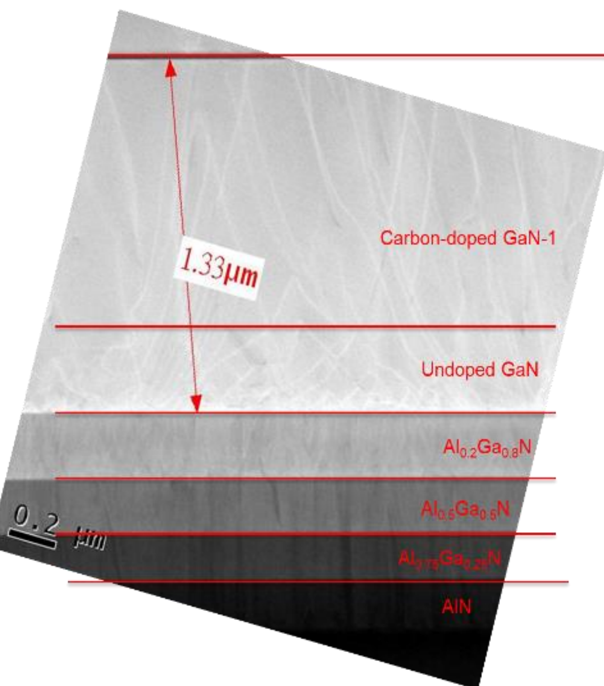
- 高功率高頻HEMT磊晶結構
- 材料: AlGaN 、GaN 、AlN等

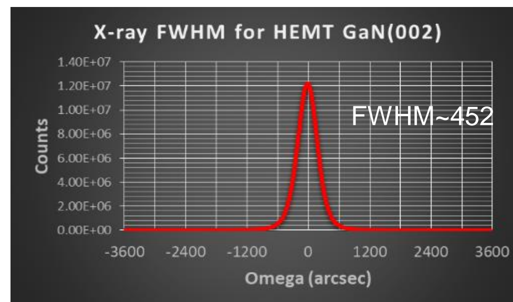
◻ 晶片尺寸/基板

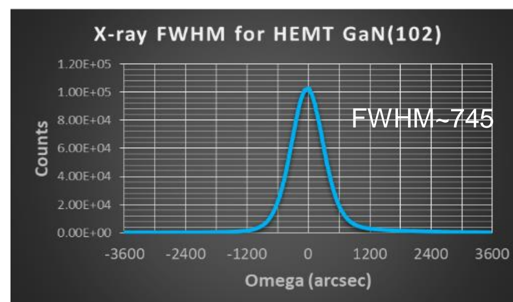
- 6吋、4吋 (Si & SiC)

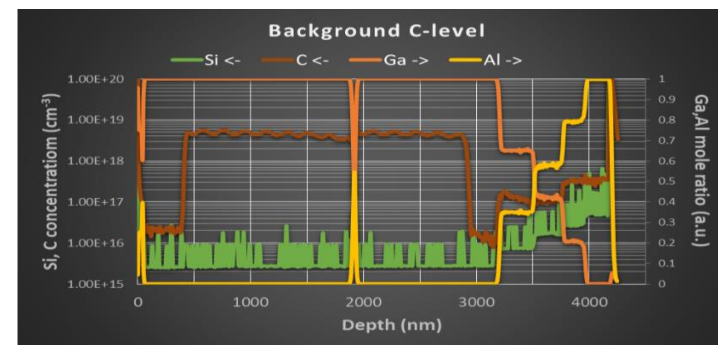


Specification	Uniformity
Within wafer GaN thickness uniformity	0.800%







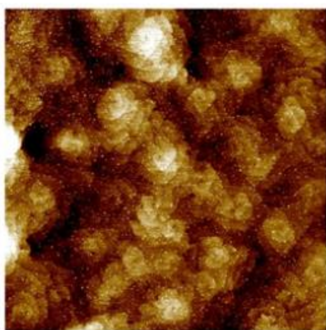


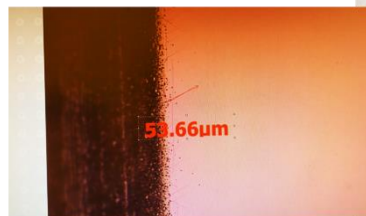
Specification	Data (cm^{-3})
Background C-level	< 1e17
C-doping level	> 5e18

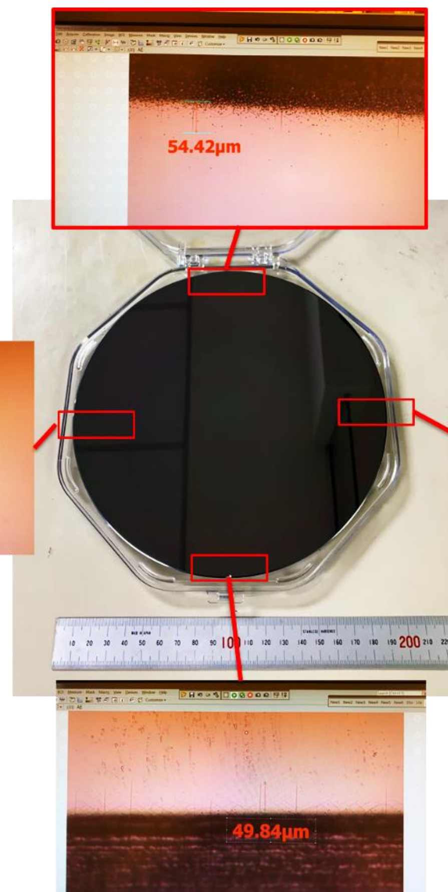
Wafer surface control

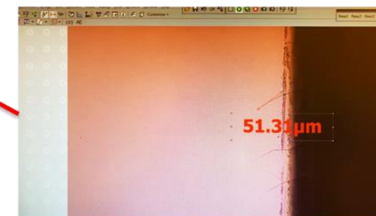
Specification		Sampling	Data
Edge exclusion for crack	≤ 3 mm	Edge across the whole wafer excluding random slip lines and particle-induced cracks on the surface	< 100 μm
Surface roughness	Ra ≤ 1.0 nm	Single point in center location of single wafer	0.2 nm

AFM Roughness, Ra: 0.2 nm









In-situ Bow Monitor Control

Specification		Sampling	Data (µm)
Wafer warp at room temperature	≤ 50 µm	Single wafer, warp is abs (Max-Min) of curvature	< 5